WHAT IS CLAIMED IS:

1. An antibody that specifically binds CD22, said anti-CD22 antibody having a variable light (V_L) chain comprising three complementarity determining regions (CDRs) designated in order from the CDR closest to the amino terminus to the CDR closest to the carboxyl terminus CDRs 1, 2, and 3, wherein said CDR1 has a sequence selected from the group consisting of SEQ ID NOs:7, 8, 9, and 10.

2. An anti-CD22 antibody of claim 1, wherein said CDR1 has the sequence of SEQ ID NO:7.

3. An anti-CD22 antibody of claim 1, further wherein said CDR 2 has the sequence of SEQ ID NO:11, and said CDR3 has the sequence of SEQ ID NO:12.

4. An anti-CD22 antibody of claim 1, wherein said V_L chain has the sequence of SEQ ID NO:20.

5. An antibody of claim 1, further comprising a variable heavy (V_H) chain comprising three complementarity determining regions (CDRs) designated in order from the CDR closest to the amino terminus to the CDR closest to the carboxyl terminus CDRs 1, 2, and 3, wherein

said CDR1 has the sequence of SEQ ID NO:13,

said CDR 2 has the sequence of SEQ ID NO:15, and

said CDR3 has a sequence selected from the group consisting of SEQ ID NOs:15, 16, 17, 18, and 19.

6. An antibody of claim 5, wherein said CDR3 has the sequence of SEQ ID NO:16.

7. An antibody of claim 5, wherein said V_H chain has the sequence of SEQ ID NO:21.

8. An antibody of claim 1, wherein said antibody is selected from the group consisting of an scFv, a dsFv, a Fab, or a $F(ab')_2$.

9. A chimeric molecule comprising

(a) an antibody that specifically binds CD22, said anti-CD22 antibody having

a variable light (V_L) chain comprising three complementarity determining regions (CDRs) designated in order from the CDR closest to the amino terminus to the CDR closest to the carboxyl terminus CDRs 1, 2, and 3, wherein said CDR1 has a sequence selected from the group consisting of SEQ ID NOs:7, 8, 9, and 10; and

(b) a therapeutic moiety or a detectable label.

10. A chimeric molecule of claim 9, further wherein said CDR 2 has the sequence of SEQ ID NO:11, and said CDR3 has the sequence of SEQ ID NO:12.

11. A chimeric molecule of claim 9, wherein said antibody further comprises a variable heavy (V_H) chain comprising three complementarity determining regions (CDRs) designated in order from the CDR closest to the amino terminus to the CDR closest to the carboxyl terminus CDRs 1, 2, and 3, wherein

said CDR1 has the sequence of SEQ ID NO:13,

said CDR 2 has the sequence of SEQ ID NO:15, and

said CDR3 has a sequence selected from the group consisting of SEQ ID NOs:15, 16, 17, 18, and 19.

12. A chimeric molecule of claim 9, wherein said V_L chain has the sequence of SEQ ID NO:20 and said V_H chain has the sequence of SEQ ID NO:21.

13. A chimeric molecule of claim 9, wherein the therapeutic moiety is selected from the group consisting of a cytotoxin, a drug, a radioisotope, or a liposome loaded with a drug or a cytotoxin.

14. A chimeric molecule of claim 13, wherein the effector moiety is a cytotoxin.

15. A chimeric molecule of claim 14, wherein the cytotoxin is selected from the group consisting of ricin A, abrin, ribotoxin, ribonuclease, saporin, calicheamycin, diphtheria toxin, or a cytotoxic fragment or mutant thereof, *Pseudomonas* exotoxin A or a cytotoxic fragment or mutant thereof ("PE"), and botulinum toxins A through F.

16. A chimeric molecule of claim 15, wherein said PE is selected from the group consisting of PE35, PE38, PE38KDEL, PE40, PE4E, and PE38QQR.

17. A chimeric molecule of claim 15, wherein said PE has a substituent of glycine, alanine, valine, leucine, or isoleucine in place of arginine at the position corresponding to position 490 of SEQ ID NO:24.

18. A chimeric molecule of claim 17, wherein said substituent at the position corresponding to position 490 of SEQ ID NO:24 is alanine.

19. A composition comprising a chimeric molecule of claim 9 and a pharmaceutically acceptable carrier.

20. A composition comprising a chimeric molecule of claim 10 and a pharmaceutically acceptable carrier.

21. A composition comprising a chimeric molecule of claim 11 and a pharmaceutically acceptable carrier.

22. A composition comprising a chimeric molecule of claim 12 and a pharmaceutically acceptable carrier.

23. A composition comprising a chimeric molecule of claim 14 and a pharmaceutically acceptable carrier.

24. A composition comprising a chimeric molecule of claim 17 and a pharmaceutically acceptable carrier.

25. A use of an antibody that specifically binds CD22, said anti-CD22 antibody having a variable light (V_L) chain comprising three complementarity determining regions (CDRs), said CDRs designated in order from the CDR closest to the amino terminus to the CDR closest to the carboxyl terminus as CDRs 1, 2, and 3, respectively, wherein said CDR1 has a sequence selected from the group consisting of SEQ ID NOs:7, 8, 9, and 10, for the manufacture of a medicament to inhibit the growth of a CD22+ cancer cell.

26. A use of claim 25, further wherein said CDR 2 has the sequence of SEQ ID NO:11, and said CDR3 has the sequence of SEQ ID NO:12.

27. A use of claim 25, wherein said antibody further comprises a variable heavy (V_H) chain comprising three complementarity determining regions (CDRs), said CDRs

being designated in order from the CDR closest to the amino terminus to the CDR closest to the carboxyl terminus as CDRs 1, 2, and 3, respectively, wherein

said CDR1 has the sequence of SEQ ID NO:13,

said CDR 2 has the sequence of SEQ ID NO:15, and

said CDR3 has a sequence selected from the group consisting of SEQ ID NOs:15, 16, 17, 18, and 19.

28. A use of claim 25, wherein said V_L chain has the sequence of SEQ ID NO:20 and said V_H chain has the sequence of SEQ ID NO:21.

29. A use of claim 25, wherein said antibody is selected from the group consisting of an scFv, dsFv, a Fab, or a $F(ab')_2$.

30. A use of claim 29, wherein said antibody is conjugated or fused to a therapeutic moiety or a detectable label.

31 A use of claim 30, wherein the therapeutic moiety is selected from the group consisting of a cytotoxin, a drug, a radioisotope, or a liposome loaded with a drug or a cytotoxin.

32. A use of claim 31, wherein the therapeutic moiety is a cytotoxin.

33. A use of claim 32, wherein the cytotoxin is selected from the group consisting of ricin A, abrin, ribotoxin, ribonuclease, saporin, calicheamycin, diphtheria toxin or a cytotoxic fragment or mutant thereof, a *Pseudomonas* exotoxin A or a cytotoxic fragment or mutant thereof ("PE"), and botulinum toxins A through F.

34. A use of claim 33, wherein said PE is selected from the group consisting of PE35, PE38, PE38KDEL, PE40, PE4E, and PE38QQR.

35. A use of claim 33, wherein said PE has a glycine, alanine, valine, leucine, or isoleucine in place of arginine at the position corresponding to position 490 of SEQ ID NO:24.

36. A use of claim 35, wherein alanine is substituted for arginine at the position corresponding to position 490 of SEQ ID NO:24.

37. An isolated nucleic acid encoding a variable light (V_L) chain comprising three complementarity determining regions (CDRs), said CDRs being designated in order from the CDR closest to the amino terminus to the CDR closest to the carboxyl terminus as CDRs 1, 2, and 3, respectively, wherein said CDR1 has a sequence selected from the group consisting of SEQ ID NOs:7, 8, 9, and 10.

38. A nucleic acid of claim 37, further wherein said CDR 2 has the sequence of SEQ ID NO:11, and said CDR3 has the sequence of SEQ ID NO:12.

39. A nucleic acid of claim 37, further encoding a variable heavy (V_H) chain comprising three complementarity determining regions (CDRs), said CDRs designated in order from the CDR closest to the amino terminus to the CDR closest to the carboxyl terminus CDRs 1, 2, and 3, respectively, wherein

said CDR1 has the sequence of SEQ ID NO:13,

said CDR 2 has the sequence of SEQ ID NO:15, and

said CDR3 has a sequence selected from the group consisting of SEQ ID NOs:15, 16, 17, 18, and 19.

40. A nucleic acid of claim 37, wherein said V_L chain has the sequence of SEQ ID NO:20 and said V_H chain of said encoded antibody has the sequence of SEQ ID NO:21.

41. A nucleic acid of claim 37, wherein said nucleic acid encodes an antibody selected from the group consisting of an scFv, a dsFv, a Fab, or a $F(ab')_2$.

42. A nucleic acid of claim 37, further wherein said nucleic acid encodes a polypeptide which is a therapeutic moiety or a detectable label.

43. A nucleic acid of claim 42, further wherein said therapeutic moiety is a drug or a cytotoxin.

44. A nucleic acid of claim 43, further wherein said cytotoxin is *Pseudomonas* exotoxin A or a cytotoxic fragment or mutant thereof ("PE").

45. A nucleic acid of claim 44, wherein said PE is selected from the group consisting of PE35, PE38, PE38KDEL, PE40, PE4E, and PE38QQR.

46. A nucleic acid of claim 44, wherein said PE has a glycine, alanine, valine, leucine, or isoleucine in place of arginine at the position corresponding to position 490 of SEQ ID NO:24.

47. A nucleic acid of claim 44, wherein alanine is substituted for arginine at the position corresponding to position 490 of SEQ ID NO:24.

48. An expression vector comprising a nucleic acid of claim 37 operably linked to a promoter.

49 An expression vector comprising a nucleic acid of claim 38, operably linked to a promoter.

50. An expression vector comprising a nucleic acid of claim 39 operably linked to a promoter.

51. An expression vector comprising a nucleic acid of claim 40, operably linked to a promoter.

52. An expression vector comprising a nucleic acid of claim 44 operably linked to a promoter.

52. An expression vector comprising a nucleic acid of claim 46 operably linked to a promoter.

53. A method of inhibiting growth of a CD22+ cancer cell by contacting said cell with a chimeric molecule comprising (a) an antibody that binds to CD22, said antibody having a variable light (V_L) chain comprising three complementarity determining regions (CDRs), said CDRs designated in order from the CDR closest to the amino terminus to the CDR closest to the carboxyl terminus CDRs 1, 2, and 3, respectively, wherein said CDR1 has a sequence selected from the group consisting of SEQ ID NOs:7, 8, 9, and 10, and (b) a therapeutic moiety,
wherein said therapeutic moiety inhibits the growth of said cell.

54. A method of claim 53, further wherein said CDR 2 of said V_L has the sequence of SEQ ID NO:11, and said CDR3 of said V_L has the sequence of SEQ ID NO:12.

55. A method of claim 53, wherein said antibody comprises a V_H chain comprising three complementarity determining regions (CDRs), said CDRs designated in order from the CDR closest to the amino terminus to the CDR closest to the carboxyl terminus CDRs 1, 2, and 3, respectively, wherein

said CDR1 has the sequence of SEQ ID NO:13,

said CDR 2 has the sequence of SEQ ID NO:15, and

said CDR3 has a sequence selected from the group consisting of SEQ ID NOs:15, 16, 17, 18, and 19.

56. A method of claim 55, wherein said V_L chain has the sequence of SEQ ID NO:20 and said V_H chain has the sequence of SEQ ID NO:21.

57. A method of claim 53, wherein said antibody is selected from the group consisting of an scFv, a dsFv, a Fab, or a $F(ab')_2$.

58. A method of claim 53, wherein said therapeutic moiety is selected from the group consisting of a cytotoxin, a drug, a radioisotope, or a liposome loaded with a drug or a cytotoxin.

59. A method of claim 53, wherein the therapeutic moiety is a cytotoxin.

60. A method of claim 59, wherein the cytotoxin is selected from the group consisting of ricin A, abrin, ribotoxin, ribonuclease, saporin, calicheamycin, diphtheria toxin or a cytotoxic fragment or mutant thereof, *Pseudomonas* exotoxin A or a cytotoxic fragment or mutant thereof ("PE"), and botulinum toxins A through F.

61. A method of claim 60, wherein said PE is selected from the group consisting of PE35, PE38, PE38KDEL, PE40, PE4E, and PE38QQR.

62. A method of claim 60, wherein said PE has a glycine, alanine, valine, leucine, or isoleucine in place of arginine at the position corresponding to position 490 of SEQ ID NO:24.

63. A method of claim 62, wherein alanine is substituted for arginine at the position corresponding to position 490 of SEQ ID NO:24.

64 A method for detecting the presence of a CD22+ cancer cell in a biological sample, said method comprising:

(a) contacting cells of said biological sample with a chimeric molecule comprising

(i) an antibody that specifically binds to CD22, said antibody having a variable light (V_L) chain comprising three complementarity determining regions (CDRs), said CDRs designated in order from the CDR closest to the amino terminus to the CDR closest to the carboxyl terminus CDRs 1, 2, and 3, respectively, wherein said CDR1 has a sequence selected from the group consisting of SEQ ID NOs:7, 8, 9, and 10, conjugated or fused to

(ii) a detectable label; and,

(b) detecting the presence or absence of said label,

wherein detecting the presence of said label indicates the presence of a CD22+ cancer cell in said sample.

65. A method of claim 64, further wherein said CDR 2 of said V_L of said antibody has the sequence of SEQ ID NO:11, and said CDR3 of said V_L of said antibody has the sequence of SEQ ID NO:12.

66. A method of claim 64, wherein said antibody further comprises a variable heavy (V_H) chain comprising three complementarity determining regions (CDRs), said CDRs designated in order from the CDR closest to the amino terminus to the CDR closest to the carboxyl terminus CDRs 1, 2, and 3, respectively, wherein

said CDR1 has the sequence of SEQ ID NO:13,

said CDR 2 has the sequence of SEQ ID NO:15, and

said CDR3 has a sequence selected from the group consisting of SEQ ID NOs:15, 16, 17, 18, and 19.

67. A method of claim 64, wherein said V_L chain has the sequence of SEQ ID NO:20 and said V_H chain has the sequence of SEQ ID NO:21.

68. A method of claim 64, wherein said antibody is selected from the group consisting of an scFv, a dsFv, a Fab, or a $F(ab')_2$.

69. A kit comprising:

(a) a container, and

(b) a chimeric molecule comprising

(i) an anti-CD22 antibody having a variable light (V_L) chain comprising three complementarity determining regions (CDRs), said CDRs designated in order from the CDR closest to the amino terminus to the CDR closest to the carboxyl terminus CDRs 1, 2, and 3, respectively, wherein said CDR1 has a sequence selected from the group consisting of SEQ ID NOs:7, 8, 9, and 10, conjugated or fused to

(ii) a detectable label or a therapeutic moiety.

70. A kit of claim 69, further wherein said CDR 2 of said V_L of said antibody has the sequence of SEQ ID NO:11, and said CDR3 of said V_L of said antibody has the sequence of SEQ ID NO:12.

71. A kit of claim 69, wherein said antibody further comprises a variable heavy (V_H) chain comprising three complementarity determining regions (CDRs) designated in order from the CDR closest to the amino terminus to the CDR closest to the carboxyl terminus CDRs 1, 2, and 3, wherein

said CDR1 has the sequence of SEQ ID NO:13,

said CDR 2 has the sequence of SEQ ID NO:15, and

said CDR3 has a sequence selected from the group consisting of SEQ ID NOs:15, 16, 17, 18, and 19.

72. A kit of claim 71, wherein said V_L chain has the sequence of SEQ ID NO:20 and said V_H chain has the sequence of SEQ ID NO:21.

73. A kit of claim 69, wherein said antibody is selected from the group consisting of an scFv, a dsFv, a Fab, or a $F(ab')_2$.

74. A kit of claim 69, wherein said therapeutic moiety is selected from the group consisting of a cytotoxin, a drug, a radioisotope, or a liposome loaded with a drug or a cytotoxin.

75. A *Pseudomonas* exotoxin A or a cytotoxic fragment or mutant thereof, wherein said PE has a glycine, alanine, valine, leucine, or isoleucine in place of arginine at the position corresponding to position 490 of SEQ ID NO:24.

76. A PE of claim 75, selected from the group consisting of PE35, PE38, PE38KDEL, PE40, PE4E, and PE38QQR.

77. A PE of claim 75, having an alanine at a position corresponding to position 490 of SEQ ID NO:24.

78. A chimeric molecule comprising a targeting moiety conjugated or fused to a *Pseudomonas* exotoxin A or a cytotoxic fragment or mutant thereof ("PE"), wherein said PE has a glycine, alanine, valine, leucine, or isoleucine in place of arginine at a position corresponding to position 490 of SEQ ID NO:24.

79. A chimeric molecule of claim 78 wherein said PE is selected from the group consisting of PE35, PE38, PE38KDEL, PE40, PE4E, and PE38QQR.

80. A chimeric molecule of claim 78 wherein said PE has an alanine at a position corresponding to position 490 of SEQ ID NO:24.

81. A chimeric molecule of claim 78 wherein said targeting moiety is an antibody.

82. A chimeric molecule of claim 81, wherein said antibody is selected from the group consisting of an scFv, a dsFv, a Fab, or a $F(ab')_2$.

83. A composition comprising a chimeric molecule of claim 78 and a pharmaceutically acceptable carrier.

84. A composition comprising a chimeric molecule of claim 79 and a pharmaceutically acceptable carrier.

85. An isolated nucleic acid encoding *Pseudomonas* exotoxin A or cytotoxic fragment or mutant thereof ("PE"), wherein said PE has a glycine, alanine, valine, leucine, or isoleucine in place of arginine at a position corresponding to position 490 of SEQ ID NO:24.

86. An isolated nucleic acid of claim 85 wherein said PE is selected from the group consisting of PE35, PE38, PE38KDEL, PE40, PE4E, and PE38QQR

87. An isolated nucleic acid of claim 85 wherein said PE has an alanine at the position corresponding to position 490 of SEQ ID NO:24.

88. An isolated nucleic acid of claim 85 wherein said nucleic acid further encodes a targeting moiety.

89. An isolated nucleic acid of claim 88 wherein said targeting moiety is an antibody.

90. An isolated nucleic acid of claim 89, wherein said antibody is selected from the group consisting of an scFv, a dsFv, a Fab, or a $F(ab')_2$.

91. An expression vector comprising a nucleic acid of claim 85 operably linked to a promoter.

92 An expression vector comprising a nucleic acid of claim 86, operably linked to a promoter.

93. An expression vector comprising a nucleic acid of claim 87 operably linked to a promoter.

94. An expression vector comprising a nucleic acid of claim 88, operably linked to a promoter.

95. A use of a targeting moiety conjugated or fused to *Pseudomonas* exotoxin A or a cytotoxic fragment or a mutant thereof ("PE"), wherein said PE has a glycine, alanine, valine, leucine, or isoleucine in place of arginine at a position corresponding to position 490 of SEQ ID NO:24, for the manufacture of a medicament to inhibit the growth of cells targeted by said targeting moiety.

96. A use of claim 95, wherein said PE is selected from the group consisting of PE35, PE38, PE38KDEL, PE40, PE4E, and PE38QQR.

97. A use of claim 95 wherein said PE has an alanine at the position corresponding to position 490 of SEQ ID NO:24.

98. A use of claim 95 wherein said targeting moiety is an antibody.

99. A use of claim 98, wherein said antibody is selected from the group consisting of an scFv, a dsFv, a Fab, or a $F(ab')_2$.

100. A method of inhibiting the growth of a cell bearing a target molecule, said method comprising contacting said cell with a chimeric molecule comprising

(a) a targeting moiety that binds to said target molecule, and

(b) *Pseudomonas* exotoxin A or a cytotoxic fragment or mutant thereof ("PE"), wherein said PE has a glycine, alanine, valine, leucine, or isoleucine in place of arginine at a position corresponding to position 490 of SEQ ID NO:24, wherein contacting said cell with said chimeric molecule inhibits the growth of said cell.

101. A method of claim 100, wherein said target molecule is a cytokine receptor and said targeting moiety is a cytokine which binds to said receptor.

102. A method of claim 100, wherein said target molecule is an antigen and said targeting molecule is an antibody which binds to said antigen.

103. A method of claim 102, wherein said antigen is a tumor associated antigen.

104. A method of claim 100, wherein said wherein said PE has an alanine in place of arginine at a position corresponding to position 490 of SEQ ID NO:24.

105. A method of claim 100, wherein the target molecule is the IL-13 receptor and the targeting molecule is IL-13, a mutated IL-13 that retains the ability to bind the IL-13 receptor, a circularly permuted IL-13, or an antibody that specifically binds a chain of the IL-13 receptor but which does not also bind the IL-4 receptor.